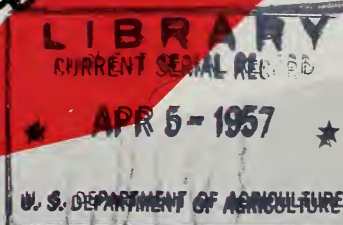


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WATCH OUT FOR *Witchweed*



a new
parasitic plant
that attacks
corn
sugarcane
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and other
plants



PA-331

UNITED STATES DEPARTMENT OF AGRICULTURE

WATCH OUT FOR *Witchweed*

a new parasitic plant that attacks corn, sugarcane, sorghum, and other plants

Witchweed¹ is a parasitic plant that attacks corn, sugarcane, sorghum, many grasses, certain sedges, and some broadleaved plants.

It was discovered in the Carolinas—the first time it had been recognized in the Western Hemisphere. It now infests more than 100 farms in North Carolina (Bladen, Columbus, Cumberland, and Robeson Counties), and South Carolina (Dillon, Horry, Marion, and Marlboro Counties).

DAMAGE

Crop damage depends upon the degree of infestation.

Corn yields in some infested fields in the Carolinas were complete failures in 1956. Witchweed was observed parasitizing crabgrass in fields of tobacco, peanuts, beans, peas, and sweet-potatoes.

Witchweed roots attach to and penetrate the roots of host plants. This reduces the efficiency of host plants in obtaining food and water.

Symptoms resemble those produced by acute drought. The plants become stunted, wilt, and turn yellowish. They die if they are heavily parasitized.

Roots of host plants appear to have masses of hairlike roots.

APPEARANCE

Witchweed plants above ground are small and bright green. The leaves are slightly hairy and the upper and lower leaf surfaces look alike.

The plants rarely grow more than 8 or 9 inches high. Some, however, may reach a height of 18 inches.

The flowers are small and usually

brick red or scarlet, although some may be yellowish red, yellowish, or almost white.

HOW IT GROWS

The seeds, which are nearly microscopic, may lie dormant 15 to 20 years. They may be spread by wind, water, or anything that moves seed-infested soil. A witchweed plant can produce up to half a million seeds.

To germinate, a seed normally must be stimulated by secretions from roots of host plants.

When the witchweed seedling starts to grow, its roots must contact, attach to, and penetrate the roots of a host. Otherwise, it dies.

After its roots penetrate roots of a host, the witchweed depends upon the host for food and water until it emerges from the soil.

The shoot emerges from the soil about 30 days after germination. After emergence, the plant turns green and manufactures its own food but continues to depend partially upon the host for water and minerals.

Flowering begins about 30 days after the seedling emerges. The first flowers appear near the base of the plant. Seed pods burst about 4 weeks after flowers appear.

Seeds scatter over the soil for the next month or so. Flowering and seed production continue until cold weather.

The life cycle of the parasite—from germination to release of first seeds—takes 90 to 120 days.

Witchweed grows best in warm temperatures and on light soils containing considerable moisture. It will, however, grow under a wide range of soil, temperature, and moisture conditions.

¹ *Striga asiatica* (L.) Kuntze.

WITCHWEED



(A) corn plant
stunted by
witchweed

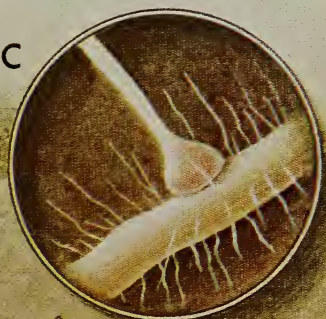
(B) general ap-
pearance of
the weed

(a) seed pods

(b) blossoms

(C) attachment
of weed root
to corn root
(greatly mag-
nified)

The pencil is to
indicate actual
size of plant



CONTROL

1. Notify your county agricultural agent if you find witchweed or suspect that a plant may be witchweed.

2. Do not move plants suspected of being witchweed—request an on-the-farm identification from your county agent.

3. Do not plant corn, sugarcane, or sorghum on infested lands.

4. Adopt these crop rotation practices:

a. Plant wheat, oats, barley, or rye in the fall; follow the practices recommended for your locality.

b. Follow these small grains the next year with either catch or trap crops.

Use a true host of witchweed, such as Sudangrass, as a *catch crop*. It secretes the chemical that causes the witchweed seeds to germinate and will support the parasite's growth. Planting and plowing under the host crop before the witchweed produces seeds will reduce the weed seeds in infested fields.

Continue this practice as long as necessary to deplete the soil of witchweed seeds.

Use for *trap crops*, plants that will cause witchweed seeds to germinate but are not true hosts. Cowpeas or soy-

beans, for example, will cause witchweed seeds to germinate, but they will not support the parasite's growth.

Trap crops should not be harvested on farms where witchweed is a severe problem unless the harvested crop is to be used in the infested area or on the farm where the crop is grown.

5. Kill crabgrass because it is a host of witchweed. So are some other grasses. Do not permit them to grow.

6. Treat noncultivated lands infested with witchweed and infestations found in cornfields with an herbicide, such as 2,4-D, to prevent flowering and seed production.

An effective rate is 1 pound of 2,4-D per acre. If crops susceptible to 2,4-D are nearby, the witchweed can be killed by spraying it with an herbicide such as 2 pounds of DNBP in 10 gallons of diesel oil plus 30 gallons of water per acre.

7. Treat cultivated land where witchweed is noted for the first time, by either cultural or chemical means to destroy the pest.

8. Keep cotton, tobacco, peanuts, and sweetpotatoes free of witchweed host plants such as crabgrass. These crop plants can be grown on witchweed infested lands so far as known now.

YOU CAN HELP PREVENT SPREAD OF WITCHWEED

This dangerous pest can spread by movement of infested soil, machinery, or transplant crops—even in pants cuffs.

Do not move these things from infested to uninfested places:

1. Witchweed plants or seeds;
2. Hay, nursery stock, bulbs, corms, tubers, rhizomes, or root crops such as carrots. Hay requires special attention because of the probability that infested host plants grow in hayfields;
3. Farm machinery, farm equipment, farm vehicles, or construction or road building equipment, unless thoroughly cleaned;
4. Used crates, boxes, bags, or other similar farm containers, unless thoroughly cleaned.

Avoid pasturing livestock on infested fields where possible.

Prepared by the Crops Research Division and Plant Pest Control Division
Agricultural Research Service in cooperation with

North Carolina State College and Clemson Agricultural College, South Carolina